Annual Report of Operations for Year 2016

To comply with NPDES General Permit No. WAG130000 for Federal Aquaculture Facilities and Aquaculture Facilities Located in Indian Country within the Boundaries of the State of Washington

NPDES # for your Facility:
WAG130001

Facility & Owner Information

Facility Name:
Carson National Fish Hatchery

Operator Name (Permittee):
Larry Zeigenfuss

Address:
Carson National Fish Hatchery
14041 Wind River Rd
Carson WA 98610

Email: larry_zeigenfuss@fws.gov
Phone: 509-427-5905

Owner Name (if different from operator):

Email:
Phone:

Best Management Practices (BMP) Plan

Has the BMP Plan been reviewed this year? ■ Yes ☐ No

Does the BMP Plan fulfill the requirements of the General Permit? ■ Yes ☐ No

Summarize any changes to the BMP Plan since the last annual report. Attach additional pages if necessary.

No changes.

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Operations and Production

Total harvestable weight produced in the past calendar year in pounds (lbs): 75,840

Pounds of food fed to fish during the maximum month:
11,618

List the species grown or held at your facility and the annual production of each in gross harvestable weight. If fish were released rather than harvested, list the weight at time of release.

Species	Fish Produced	Receiving Water(s) to which Fish were Released	Month Released/ Spawned
Spring Chinook	243,343	Walla Walla Basin	March
Spring Chinook	1,118,796	Wind River	April

Fill in the table below with production numbers from the past year. List the **maximum** amount of fish on-site and the maximum amount of food fed **per month**.

Month	Total Fish (lbs)	Fish Feed (lbs)	Month	Total Fish (lbs)	Fish Feed (lbs)
January	58,909	4,400	July	35,222	4,532
February	66,842	8,448	August	36,113	6,688
March	71,088	11,618	September	40,355	6,424
April	74,207	6,114	October	42,809	3,652
May	17,347	5,280	November	46,108	2,288
June	25,870	5,060	December	46,702	3,520

Additional Comments:

Solid Waste Disposal

Describe the solid waste disposed of during the calendar year (including fish mortalities).

Type of Solid Disposed	Date Disposed	Location Disposed
Adult Salmon (spawned)	August 2016	Buried
Fry Mortalities	Throughout 2016	Underground digester
Aquatic Vegetation (from screens)	April - Nov 2016	Composted

Additional Comments:

Fish Mortalities

Include a description and the dates of mass mortalities in the past year (more than 5% per week). Attach additional pages, if necessary. Include total mortalities from all causes.

Date	Cause of Deaths	Steps Taken to Correct Problem	Pounds of Fish

Additional Comments:

No incidents of mass mortalities greater than 5% per week.

Noncompliance Summary

Include a description and the dates of noncompliance events (including spills), the reasons for the incidents, and the steps taken to correct the problems. Attach additional pages, if necessary.

Inspections & Repairs for Production & Wastewater Treatment Systems

Date Inspected	Date Repaired	Description of System Inspected and/or Repaired
May 2016	NA	Pollution Abatement Pond

Aquaculture Drugs and Chemicals

Please indicate whether you used each drug/chemical **during the past calendar year.**
Describe the use of each drug/chemical in more detail on the following pages.

Used in the past year?	Drug or Chemical
☐ Yes ■ No	Azithromycin
☐ Yes ■ No	Chloramine-T: ***See additional reporting requirements on page 7***
■ Yes ☐ No	Chlorine disinfected raceways after pressure wash
■ Yes ☐ No	Draxxin
☐ Yes ■ No	Erythromycin - injectable
■ Yes ☐ No	Erythromycin - medicated feed
☐ Yes ■ No	Florfenicol (Aquaflor)
■ Yes ☐ No	Formalin - 37% formaldehyde: ***See additional reporting requirements on page 7***
☐ Yes ■ No	Herbicide - describe:
☐ Yes ■ No	Hormone - describe:
☐ Yes ■ No	Hydrogen Peroxide: ***See additional reporting requirements on page 7***
■ Yes ☐ No	Iodine: ***See additional reporting requirements on page 7***
☐ Yes ■ No	Oxytetracycline
☐ Yes ■ No	Potassium Permanganate: ***See additional reporting requirements on page 7***
☐ Yes ■ No	Romet
☐ Yes ■ No	SLICE (emamectin benzoate)
■ Yes ☐ No	Sodium Chloride - salt
☐ Yes ■ No	Vibrio vaccine
☐ Yes ■ No	Other:
☐ Yes ■ No	Other:

Aquaculture Drugs and Chemicals (cont'd)

Describe all drug and/or chemical treatments that occurred during the year. Fill out the information below for each drug or chemical, plus page 7 for water-borne treatments. Attach additional pages as necessary.

Brand Name: Ovadine		Generic Name: Iodine	
Reason for use: Disinfecting dip for equipment during spawning operations			
■ Preventative/Prophylactic ☐ As-needed	Total quantity of formulated product per treatment (specify units): 2.03 Liters	Total quantity of formulated product used in past year (specify units): 9.7 Liters	
Date(s) of treatment: August 10, 17, and 24, 2016			Total number of treatments in past year: 3
Maximum daily volume of treated water: 209 Liters	Treatment concentration (specify units): 100 ppm	Duration and frequency of treatment(s): Bath is used for 6 hours during spawning	
Method of application:	■ Static Bath ☐ Flow-through	☐ Medicated Feed ☐ Other (describe):	
Location in facility chemical was used (check all that apply):	☐ Raceways ■ Incubation building	☐ Ponds ☐ Off-line settling basin	■ Other (describe): Spawning Shed
Where did water treated with this chemical go? (check all that apply):	■ Discharged w/o treatment ■ Settling basin	☐ Septic System ☐ Publicly owned treatment works	☐ Other (describe):
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use: Half of treated water went to settling basin (spawning shed). Incubation mix not treated.			

Brand Name: Ovadine		Generic Name: Iodine	
Reason for use: Disinfectant used to treat eggs for 30 min while hardening			
■ Preventative/Prophylactic ☐ As-needed	Total quantity of formulated product per treatment: 5.8 Liters - highest level	Total quantity of formulated product used in past year (specify units): 9.7 Liters	
Date(s) of treatment: August 10, 17, and 24, 2016			Total number of treatments in past year: 3
Maximum daily volume of treated water: 1,162.5	Treatment concentration (specify units): 50 ppm	Duration and frequency of treatment(s): 30 min	
Method of application:	■ Static Bath ☐ Flow-through	☐ Medicated Feed ☐ Other (describe):	
Location in facility chemical was used (check all that apply):	☐ Raceways ■ Incubation building	☐ Ponds ☐ Off-line settling basin	☐ Other (describe):
Where did water treated with this chemical go? (check all that apply):	■ Discharged w/o treatment ☐ Settling basin	☐ Septic System ☐ Publicly owned treatment works	☐ Other (describe):
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use:			

Aquaculture Drugs and Chemicals (cont'd)

Additional Reporting Requirements for Water-Borne Treatments

- If a water-borne treatment was used during the calendar year, Permittees must include detailed records/calculations as an attachment to this Annual Report in order to demonstrate how the maximum effluent concentrations of solution and active ingredient were calculated for each chemical.
- EPA recognizes that water-borne treatments may vary in the volume of the vessels treated, concentration, quantity of product, etc. Permittees must provide the information listed in the following tables for a reasonable worst case (i.e., maximum effluent concentration) scenario, not for each individual treatment.
- Permittees must submit this information and calculate the maximum effluent concentration for each water-borne chemical used during the past calendar year.
- See also Appendix D for the Chemical Log Sheet.

Static Bath Treatments	
Tank Volume	1,162.5 Liters
Desired Static Bath Treatment Concentration	50 µg/L
Volume of Product Needed	5.8 Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: 0.065 ppm per day Active Ingredient: 0.00065 ppm (1% active) Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	88,772,220 Liters per day. Specify Units
Maximum % of Facility Discharge Treated	0.0 % of Total Discharge

Flow-Through Treatments	
Tank Volume	Liters
Calculated Flow Rate	Liters/Minute
Duration of Treatment	Minutes
Desired Flow-Through Treatment Concentration of Product	µg/L
Amount of Product to Add Initially	Liters Product
Amount of Product to Add During Treatment	mL/Minute
Total Volume of Product Needed	Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: Active Ingredient: Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	Specify Units
Maximum % of Facility Discharge Treated	% of Total Discharge

Aquaculture Drugs and Chemicals (cont'd)

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- Permittees must submit this information and calculate the maximum effluent concentration for each water-borne chemical used during the past calendar year.
- See also Appendix D for the Chemical Log Sheet.

Static Bath Treatments	
Tank Volume	209.25 Liters
Desired Static Bath Treatment Concentration	100 µg/L
Volume of Product Needed	2.029 Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: 0.024 ppm per day Active Ingredient: 0.00024 ppm (1% active) Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	88,772,220 Liters per day. Specify Units
Maximum % of Facility Discharge Treated	0.0 % of Total Discharge

Flow-Through Treatments	
Tank Volume	Liters
Calculated Flow Rate	Liters/Minute
Duration of Treatment	Minutes
Desired Flow-Through Treatment Concentration of Product	µg/L
Amount of Product to Add Initially	Liters Product
Amount of Product to Add During Treatment	mL/Minute
Total Volume of Product Needed	Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: Active Ingredient: Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	Specify Units
Maximum % of Facility Discharge Treated	% of Total Discharge

Aquaculture Drugs and Chemicals (cont'd)

Describe all drug and/or chemical treatments that occurred during the year. Fill out the information below for each drug or chemical, plus page 7 for water-borne treatments. Attach additional pages as necessary.

Brand Name: Formacide B		Generic Name: Formalin	
Reason for use: Treating adult fish to prevent parasites and fungus			
■ Preventative/Prophylactic ☐ As-needed	Total quantity of formulated product per treatment (specify units): 18 G	Total quantity of formulated product used in past year (specify units): 504 Gallons	
Date(s) of treatment: June 13, 2016 thru August 15, 2016			Total number of treatments in past year: 18
Maximum daily volume of treated water: 348,750 Liters	Treatment concentration (specify units): 200 ppm	Duration and frequency of treatment(s): 60 min, 3 treatments per week	
Method of application:	☐ Static Bath ■ Flow-through	☐ Medicated Feed ☐ Other (describe):	
Location in facility chemical was used (check all that apply):	☐ Raceways ☐ Incubation building	■ Ponds ☐ Off-line settling basin	☐ Other (describe):
Where did water treated with this chemical go? (check all that apply):	■ Discharged w/o treatment ☐ Settling basin	☐ Septic System ☐ Publicly owned treatment works	☐ Other (describe):
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use:			

Brand Name: Formacide B		Generic Name: Formalin	
Reason for use: Anti-fungal treatment for eggs			
■ Preventative/Prophylactic ☐ As-needed	Total quantity of formulated product per treatment: 9.8 Liters - highest level	Total quantity of formulated product used in past year (specify units): 87.6 Liters	
Date(s) of treatment: Sept 22, 2016 - Oct 20, 2016			Total number of treatments in past year: 13
Maximum daily volume of treated water: 395 Liters/min	Treatment concentration (specify units): 1667 ppm	Duration and frequency of treatment(s): 15 min	
Method of application:	☐ Static Bath ■ Flow-through	☐ Medicated Feed ☐ Other (describe):	
Location in facility chemical was used (check all that apply):	☐ Raceways ■ Incubation building	☐ Ponds ☐ Off-line settling basin	☐ Other (describe):
Where did water treated with this chemical go? (check all that apply):	■ Discharged w/o treatment ☐ Settling basin	☐ Septic System ☐ Publicly owned treatment works	☐ Other (describe):
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use:			

Aquaculture Drugs and Chemicals (cont'd)

Additional Reporting Requirements for Water-Borne Treatments

- If a water-borne treatment was used during the calendar year, Permittees must include detailed records/calculations as an attachment to this Annual Report in order to demonstrate how the maximum effluent concentrations of solution and active ingredient were calculated for each chemical.
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- Permittees must submit this information and calculate the maximum effluent concentration for each water-borne chemical used during the past calendar year.
- See also Appendix D for the Chemical Log Sheet.

Static Bath Treatments	
Tank Volume	Liters
Desired Static Bath Treatment Concentration	µg/L
Volume of Product Needed	Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: Active Ingredient: Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	Specify Units
Maximum % of Facility Discharge Treated	% of Total Discharge

Flow-Through Treatments		
Tank Volume	649,264	Liters
Calculated Flow Rate	5812.5	Liters/Minute
Duration of Treatment	60	Minutes
Desired Flow-Through Treatment Concentration of Product	200	µg/L
Amount of Product to Add Initially	69.75	Liters Product
Amount of Product to Add During Treatment	1,162.5	mL/Minute
Total Volume of Product Needed	69.75	Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: 0.78 ppm over 1 Day Active Ingredient: 0.29 ppm (37% Active)	Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	88,772,220 Liters per Day	Specify Units
Maximum % of Facility Discharge Treated	0.0	% of Total Discharge

Aquaculture Drugs and Chemicals (cont'd)

Additional Reporting Requirements for Water-Borne Treatments

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Static Bath Treatments	
Tank Volume	Liters
Desired Static Bath Treatment Concentration	µg/L
Volume of Product Needed	Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: Active Ingredient: Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	Specify Units
Maximum % of Facility Discharge Treated	% of Total Discharge

Flow-Through Treatments		
Tank Volume	11.625	Liters
Calculated Flow Rate	395	Liters/Minute
Duration of Treatment	15	Minutes
Desired Flow-Through Treatment Concentration of Product	1,667	µg/L
Amount of Product to Add Initially	9.883	Liters Product
Amount of Product to Add During Treatment	658.87	mL/Minute
Total Volume of Product Needed	9.883	Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: ppm over 1 Day Active Ingredient: ppm (37% Active)	Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	88,772,220 Liters per Day	Specify Units
Maximum % of Facility Discharge Treated	0.0	% of Total Discharge

Changes to the Facility or Operations

Describe any changes to the facility or operations since the last annual report.
No changes to facility or operations in 2016

Signature and Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly evaluate and gather the information submitted. Based on my inquiry of the person or persons, who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed name of person signing	Title
Larry Zeigenfuss	Hatchery Manager
Applicant Signature Larry Zeigenfuss	Date Signed Feb 16, 2017

Submittal Information

Send the complete, signed information, along with any attachments, to the following address:

U.S. EPA Region 10, OWW-191

Washington Hatchery Annual Report

1200 Sixth Avenue, Suite 900

Seattle, WA 98101-3140